

ABSTRACT OF THE DISCLOSURE

A simple, compact optical system is provided that includes a transmissive optical element and a HOE but that nevertheless does not require an extra optical element for the correction of chromatic aberration. The HOE is designed to have diffractive efficiency for each of R, G, and B light beams and have different focal lengths for those light beams so as to correct the longitudinal chromatic aberration produced by a rectangular parallelepiped prism. This eliminates the need for an extra means for correcting the chromatic aberration produced by the prism. The HOE may be designed to exhibit different angles of diffraction for the R, G, and B light beams so as to correct the chromatic aberration produced perpendicularly to the optical axis by a wedge-shaped prism.